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Title: Tracheal preservation: Histological changes after 6 hour preservation at 4°C with celsior, Euro-Collins or perfadex

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Body: Tracheal replacement remains a challenge in thoracic surgery, since there is no successful method to preserve it and thus, to perform the transplantation. Solid organs are successfully preserved with preservation solutions like Celsior, Euro-Collins or Perfadex, thus we decided to study the effects of these 3 preservation solutions in tracheal preservation. Material and Methods: Six dogs trachea were harvested, and divided in 2 rings segments in order to be preserved 6 hours at 4°C with one of these preservation solution as follows: Group I (n=6): Perfadex; Group II (n=6): Celsior; Group III (n=6): Euro-Collins; Group IV (n=6): Saline Solution and Group V (n=6): No preservation. The histological changes were studied as well as the degree of apoptosis induced during the preservation time. Results: The glands kept their normal histological shape with Perfadex and Euro-Collins; The cartilage kept their normal staining properties and histological structure with Perfadex and Euro-Collins. In contrast with Celsior and Saline Solution, the glands lost their normal structure and shape and the cartilage showed staining alterations proximal and distal to the pericondrium. The degree of apoptosis was increased with Celsior and Saline Solution. Conclusions: The best trachea preservation solutions were Perfadex and Euro-Collins. The apoptotic activity was increased with Celsior and Saline Solution.